

PHENIX WEEKLY PLANNING

Technical Support 2008

**Merry
Christmas**



12/18/2008
Don Lynch

12/18/08



IR Configuration for remainder of shutdown

October November December January

5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25

<DONE>

Run Position 10/20 - 10/31
(CM & MMS moved north WC west)

Station 1 south access 11/3-12/12
(MMS moved south WC west)

<DONE>

Station 1 north access 12/15-12/31
(CM moved south, WC west)

<Current IR Configuration>

East Carriage Install 1/2-1/15
(CM moved north, EC & WC opt.)

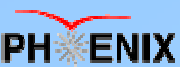
Run Position 1/16-1/19
(MMS moved north, EC & WC opt)

Ready for run 9 1/19-2/1
(MuID Collars Installed, EC & WC opt.)

Electrical Shutdown (CA panel rework) 12/11 AM



Shutdown '08 Schedule



October November December January
 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25

Station 1 south access 11/3-12/12
 (MMS moved south WC west)



Move MMS south 11/3

<DONE>

Install sta 1. S Scaffolds 11/4-11/7

<DONE>

HBD Installation (west)
 (east)

<DONE,>

<DONE>

* Mechanical installation Done..Cabling testing & Commisioning continues until start up

MuTrigger FEE

<DONE>

Sta 1 S chasis install

Sta 1S chasis 11/3-11/14
 Water & air (2&3 S Done)

<DONE>

Install/test cards 10/2-12/12
 sta 2&3 N and sta 1, 2 & 3 S



Install Lead absorber 11/17-12/12

<DONE>

Install FEE S rack platform
 And racks

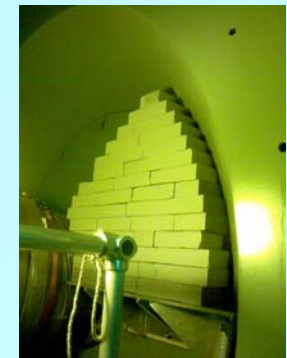
<DONE>

FEE S Cabling & Testing 11/24-12/12



MuTr sta 1 S Decaps 12/1-12/12

<DONE>



Technical Support 2008

12/18/08

October November December January
 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25

Station 1 north access 12/15-12/31
 (CM moved south, WC west)

Remove Sta 1 S <Done>
 And Sta 2/3 N scaffolds

Move CM south <Done>

Install MMS lampshade 12/18-12/21

Install MMN lampshades 12/18-12/31

Install MMN Crossovers & supports

Continue HBD, MuTrigger FEE
 & RPC prototype cabling & commissioning

RPC Factory Scope Increase review 12/18



October November December January
 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25

East Carriage Install 1/2-1/15
 (CM moved north, EC & WC opt.)

Install EC 1/2-1/15

Run Position 1/16-1/19
 (MMS moved north, EC & WC opt)

Ready for run 9 1/19-2/1
 (MuID Collars Installed, EC & WC opt.)

DC East/West Repairs 1/16-2/1

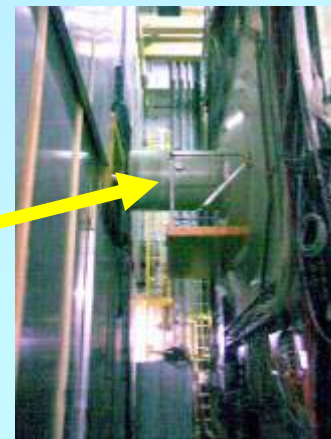
Install MuID Collars 1/19-1/21

Pink/Blue/White Sheets 1/16-2/1

Start watch shifts 1/27

Close Shield Wall 126-1/30

Cryo Start Up, Start Physics 2/1-2/18



Other On going Tasks

October				November				December				January				
5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25

Fan Tray Maintenance (fill in)



RPC3 Prototype install (11/15-12/31)
(including assembly at factory,
Moving tunnel shielding, modify
Crystal palace & vapor barrier,
RPC3 install, rack, install
scintillators, services & testing)



RPC Factory Support

Dark Current test stand



Storage Racks with humid. Cntrl



Prep for 2009 Shutdown
(as time permits)



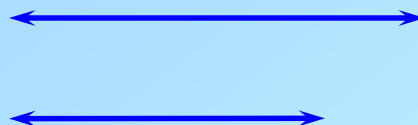
Technical Support 2008

October November December January
 5 12 19 26 2 9 16 23 30 7 14 21 28 4 11 18 25

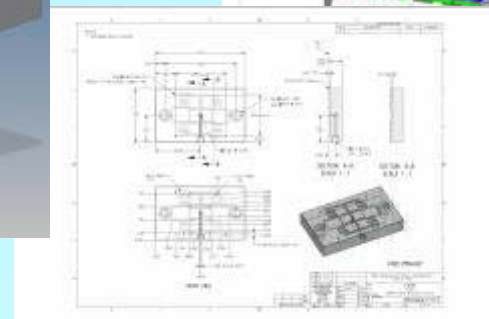
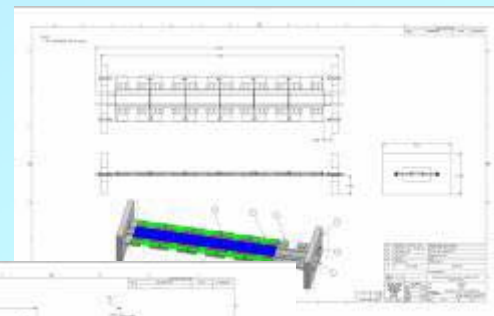
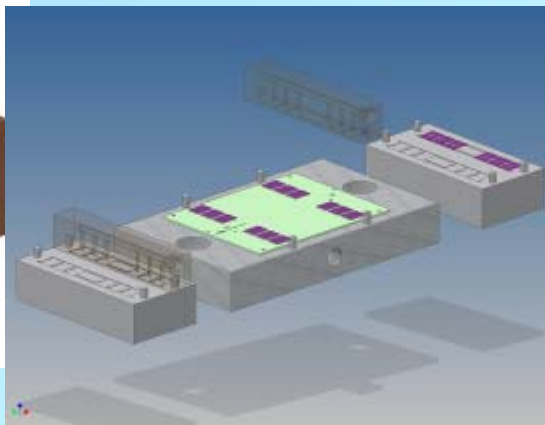
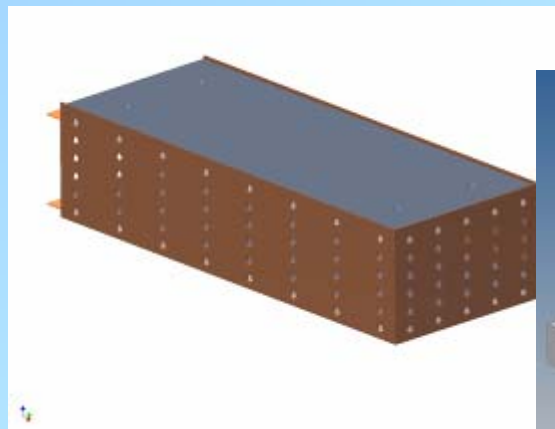
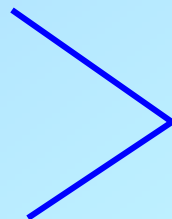
Rack room electronics, etc.

Build new storage 10/1-12/15
 crates

NCC prototype design support
 HBD support
 VTX fabrication tooling design
 VTX installation design
 FVTX design/engineering support



As Required

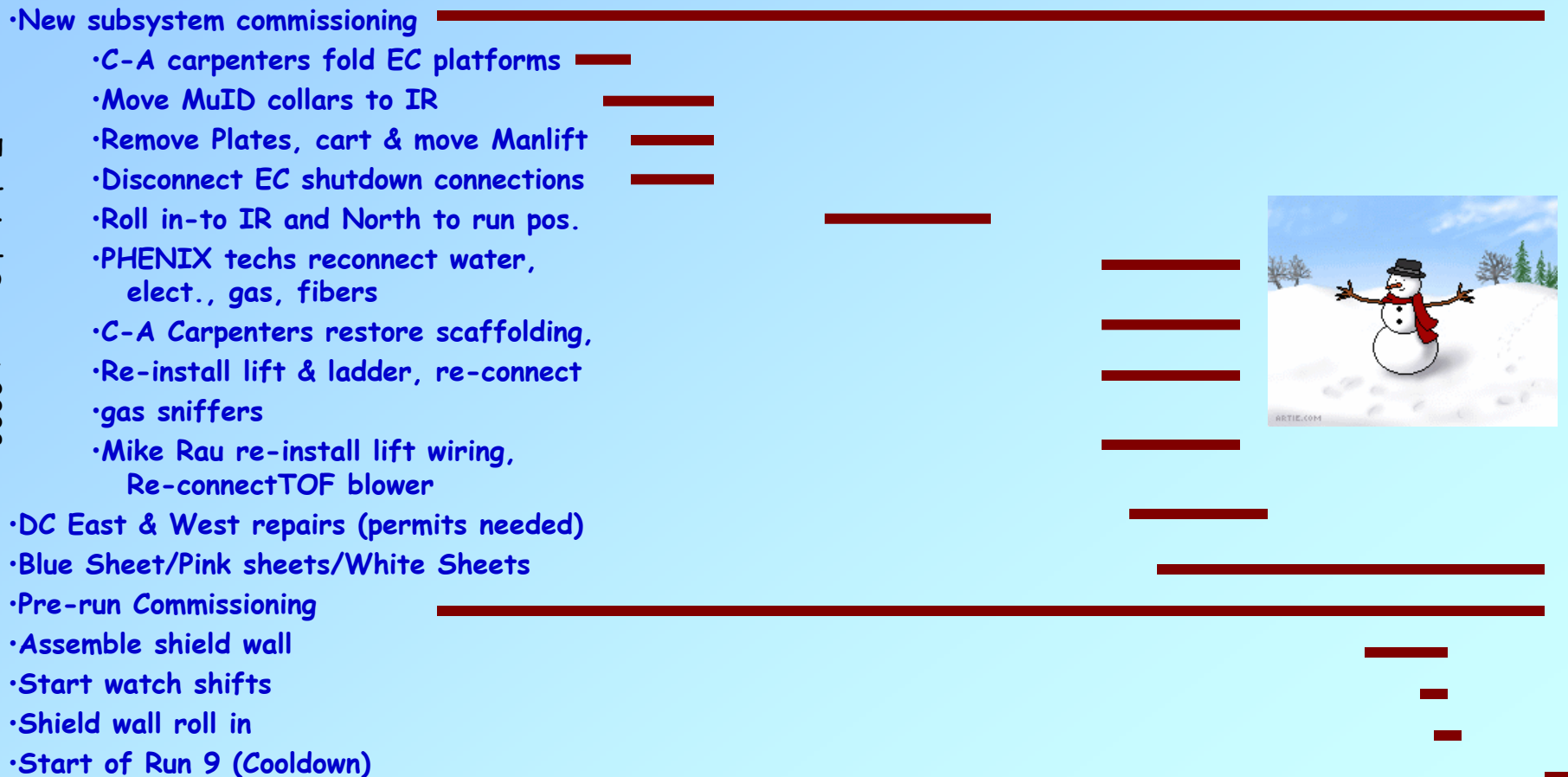


Prep for run 9

January 2009

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

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12/18/08

Electrical Tech Tasks

Here is a list of the important items required to be completed E&FI:

- Control Room Annunciator System - complete wiring and program the electronics for the additional 48 alarm window box unit. Frank & Paul - 2 days **Wiring is complete. Programming of electronics and pre-op testing needed - 1 day.**
- PHENIX Notifier Fire Alarm System - Tie in two wire communication network cable into the five (5) new racks (IR Muon Trigger racks North & South, 2 Rack Room Muon Trigger racks, Tunnel rack for RPC. Program the fire alarm panel to recognize these new racks). Frank & Paul-two days.
- Install and power the Gas Mixing House SF6 detector/monitor. **Detector unit mounted-not powered.** Wire into the PHENIX Safety Monitor and control System (SMCS). Test and verify safety/alarm actions for the unit using R134A gas. Frank & Paul-two days.
- Energize the HBD heater and temperature monitor system. Re-test & verify heater control and pre-amp temperature readout points for HBD East and West. Frank, Paul & Mike Lenz-one day
- Connect the Remote Monitor & Control (RMC - ADAM System) communication cable into the five new racks. Pre-test control and readout functions for these racks prior to "PINK" sheet testing. Frank & Steve Boose-one day.
- Perform a full "dry" run of all SMCS logic actions prior to performance of the CAD witnessed "BLUE" sheet test. Frank & Paul-two days.

Lower Priority items:

- Troubleshoot and repair Muon Trigger optical data cables.
- Install and test temperature and flow interlock instruments for protection of the new Control Room Duct Heater.

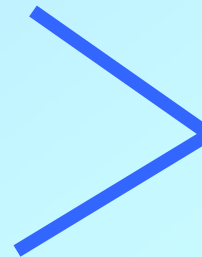


Shutdown '08 Electrician Work

- * Run Power to new MuTrgr FEE racks on MMS. *by 10/31 Wiring completed...temporary power to be provided for South FEE tests*
- * Re-wire ToF Rack power distribution bucket in Gas Mixing House. This is to correct minor wiring errors. *Done. Mixing house UPS's installed and working.*
- * Walk down PHENIX Electrical Distribution Panels/Breakers and update changes on the electrical one-line drawings. *Complete by 12/31.*
- * Install power and signal cable tray (ceiling suspended) for new DCM rack row - north of existing DCM racks. *To Be Scheduled*
- * Assist in signal and LV cable installation for MuTr/RPC upgrades as necessary. *Installation of RPC prototype rack needed*
- * Repair Duct heaters for Control Room. *Temporary 15 KW Heater installed. To be completed?*
- * Upgrade power capacity of Central Magnet power distribution for future bridge rack loads.
- * Remove existing 15KVA transformer and install 45KVA unit.



Lower priority; not required for run 9, to be scheduled when manpower available and operations & projects inconvenience are minimized



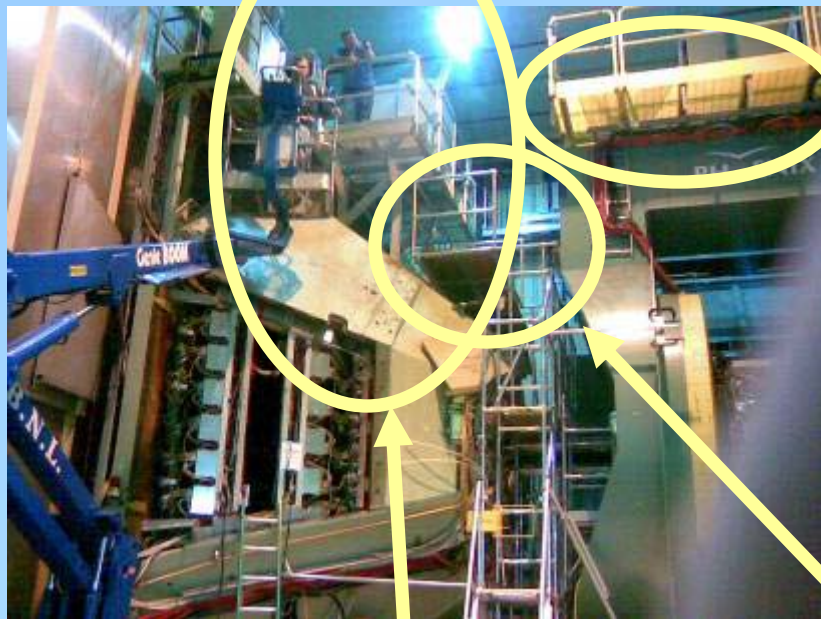
1008 Building Maintenance Issues

- Roof leak in utility bathroom at northwest corner behind tech offices.
- Roof leak over door between rack room and assembly hall.
- Trailer bathroom slop sink (for Custodians).
- Heat wrap tape for trailer bathroom toilet drains to prevent freeze/clogging in winter.
- New duct heater (This item is in progress and should be completed soon)
- Improved Rack Room AC performance (This item has been addressed time and again but unsatisfactorily. Currently the AC fails periodically and is repaired only to fail again. On-condition maintenance is not adequate...an engineered solution is needed.)



MuTrigger FEE South Rack

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Bridge water manifolds have been reworked...need to be reinstalled



MuTrigger South Rack Platform & racks installed, power hooked up cabling and rack cooling in progress

Station 1 South Scaffold modified.. will remain in place until 12/12



Rack ready waiting
for shielding to be
re-stacked which
is waiting for
crane to be re-
powered



RPC3 Prototype Installation



RPC3 prototype: mechanical
installation is complete;
environmental control installation is
complete; services (gas, signal,
electric) in progress

RPC Absorber



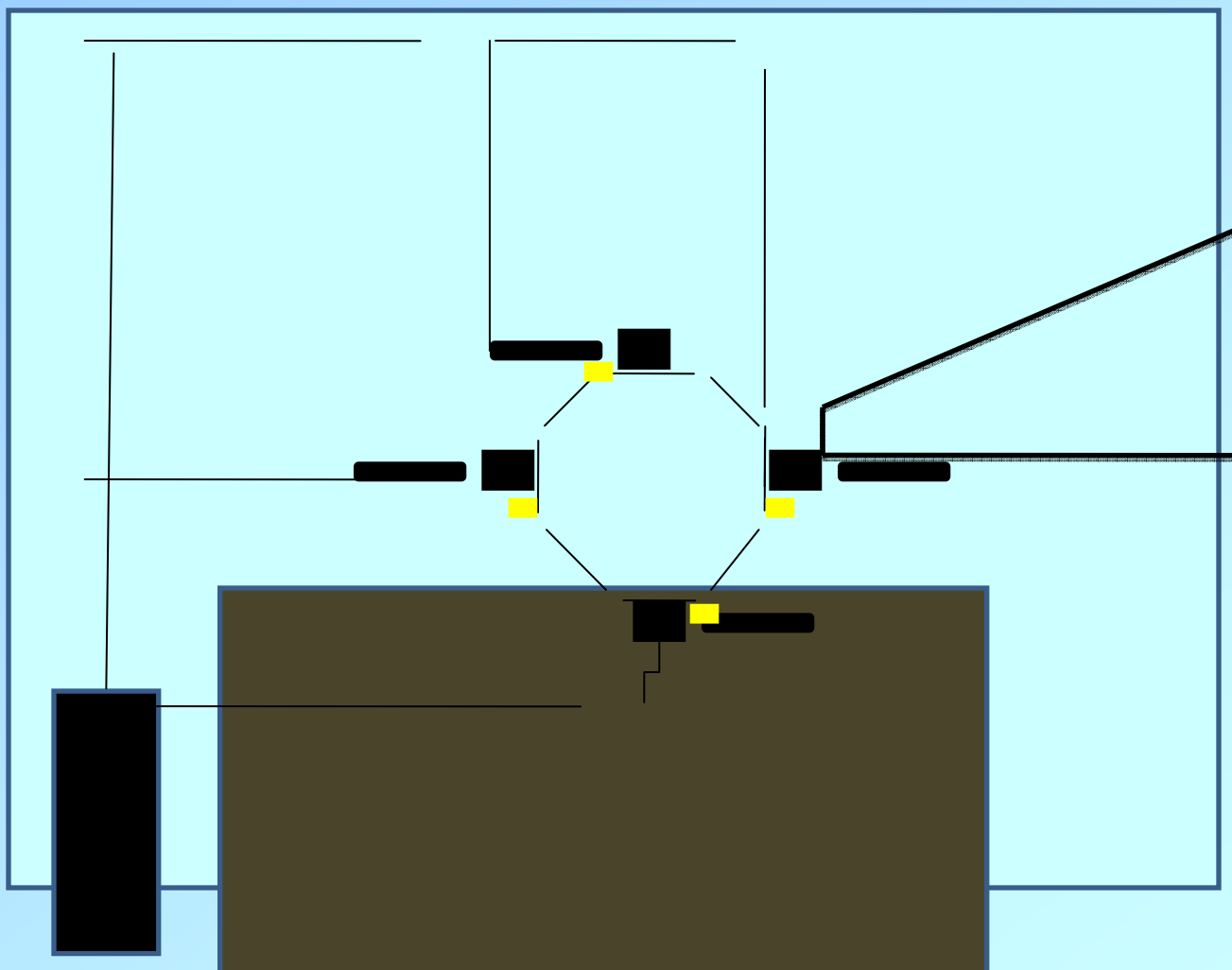
RPC3 Prototype Installation: Scintillators

- 4 pairs of scintillation counters
- each pair consists of 2 ~1" thick scintillators; active area ~ 2" x 2" ; Length ~10" with phototube and shielding; light guide cylinder ~ 1" dia. With 1" dia PMT's; Weight is ~ 4 lb per pair.
- TLD's: Change and read weekly (quantity and location TBD)
- To be positioned in South tunnel uniformly distributed around the beam pipe at approximately 3, 6, 9 and 12 O'clock at a radially convenient location which overlaps the RPC3 prototype
- Z location is south of RPC3 as close as possible but at most 12" away (for the 3 O'clock pair, others to match z-position)
- Detectors require 2.5 kV to be run from IR.
- 16 channel signal, also to be run from IR
- Rack support is TBD





RPC3 Prototype scintillators



Planning is in progress

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12/18/08

HBD HV Tests In Progress



RPC Factory Change in Scope

C-A ESRC Review this afternoon (12/18)

Presenters:

Don: Introduction, revised layout, material handling and storage, burn-in test station mechanical design

Paul: Revised electrical plan; revised safety plan

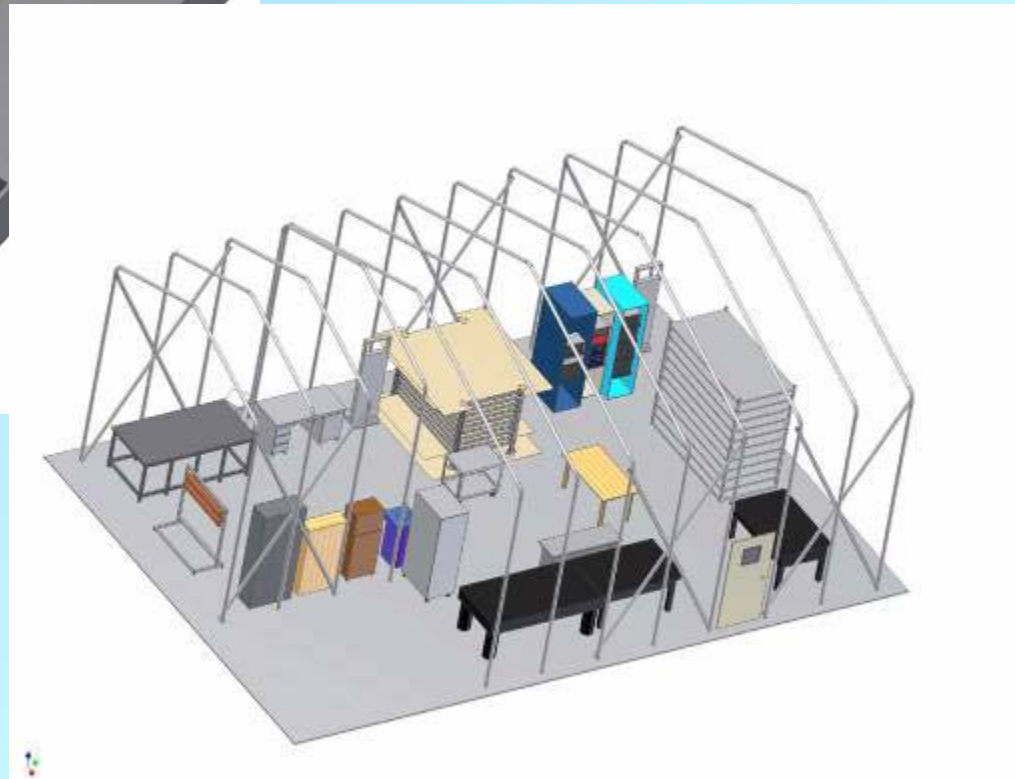
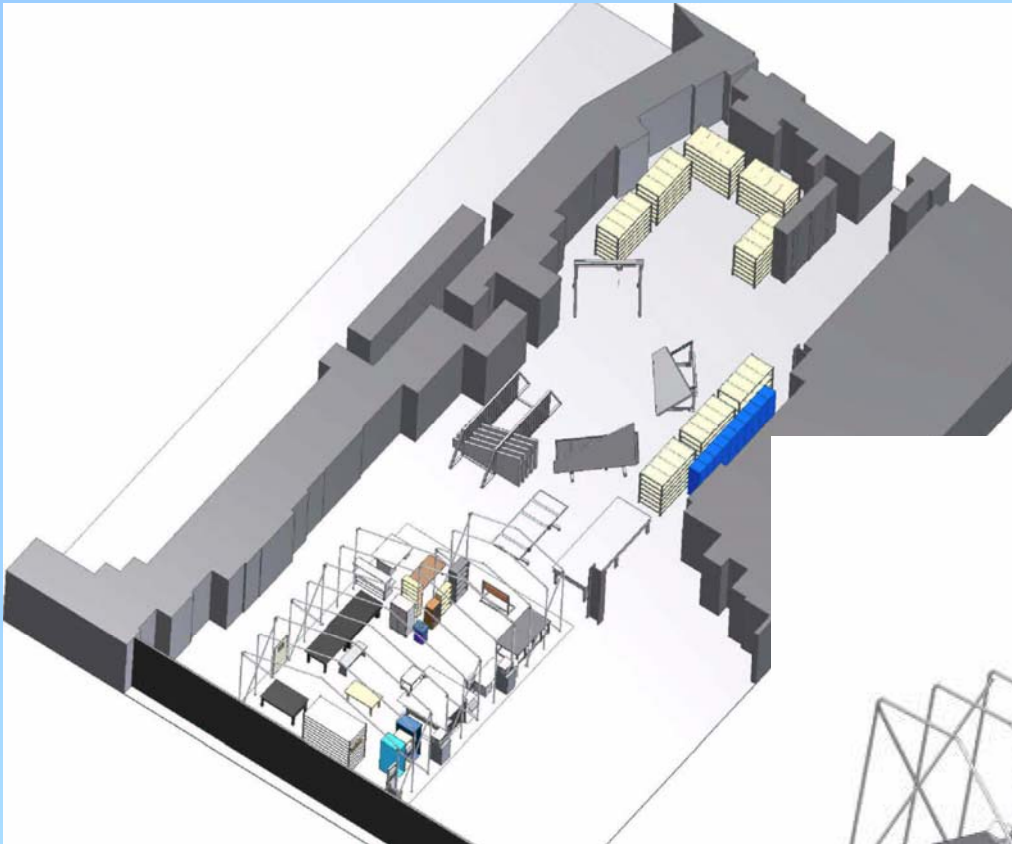
Rob: Revised gas distribution plan

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RPC Factory Support

Technical Support 2008



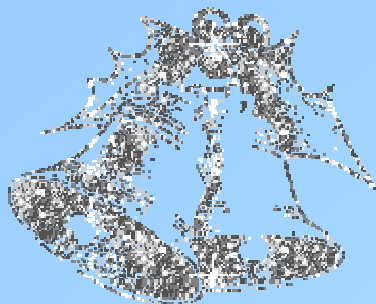
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RPC Factory Support

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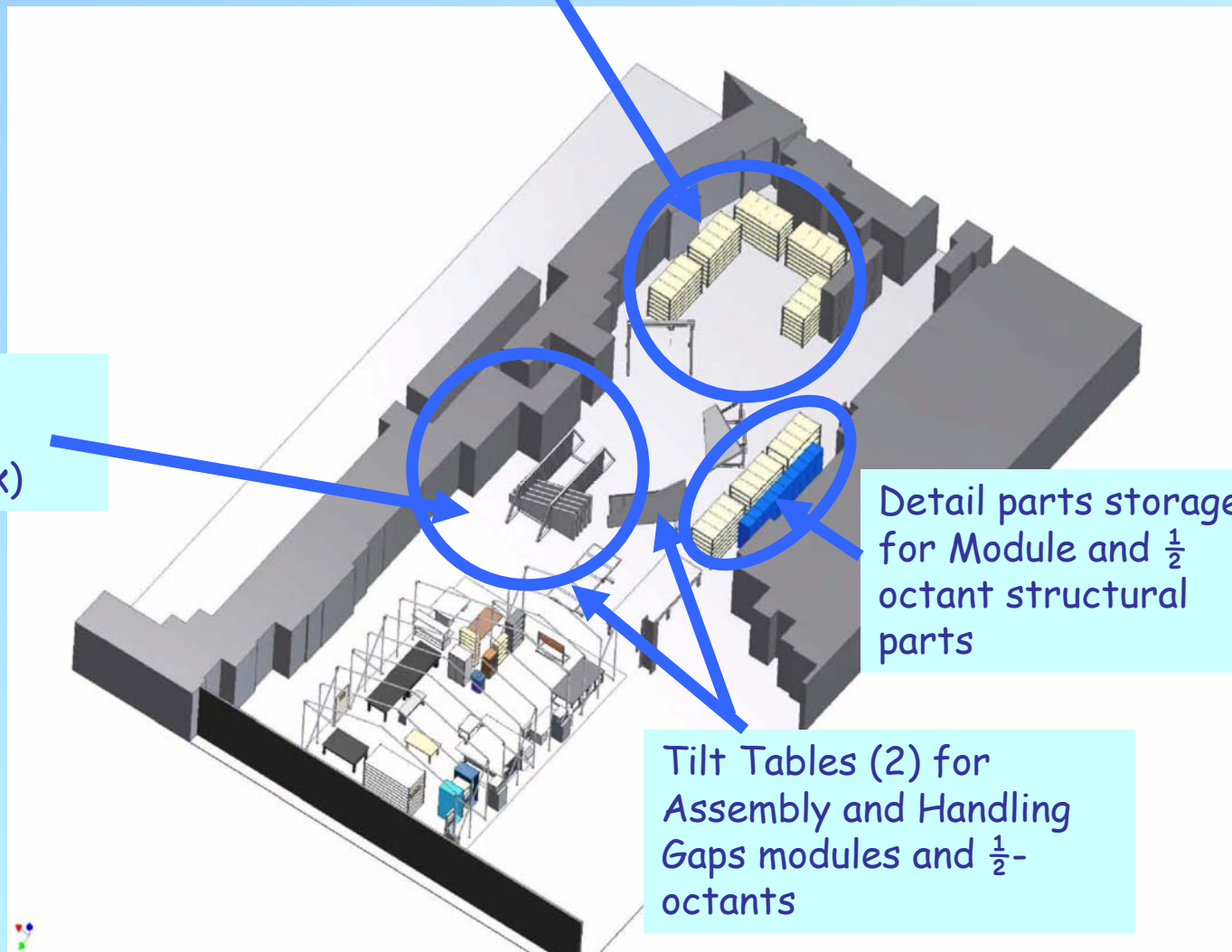


12/18/08



Module and Gap
Storage with
humidity Control

Burn-in
test stand
(bicycle rack)



Detail parts storage
for Module and $\frac{1}{2}$
octant structural
parts

Tilt Tables (2) for
Assembly and Handling
Gaps modules and $\frac{1}{2}$ -
octants

Dark Current Test Stand under construction



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Also working on:

- a burn-in test stand for $\frac{1}{2}$ octants



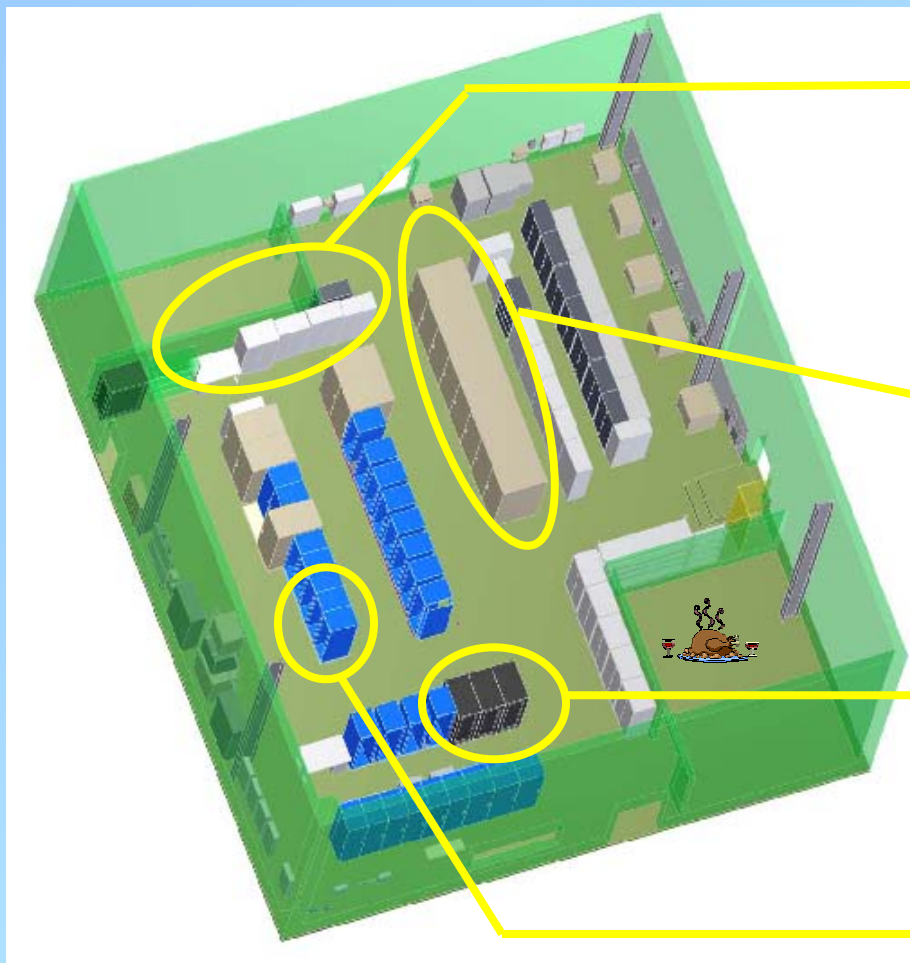
- additional storage for gaps modules and structural detail parts



- transport table/cart

Proposed Reorganization

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Relocated file & storage cabinets, & desk



Added 2 DCM racks to east end of row 5 and 2 DCM racks to west end of row 5

Moved 2 large black racks from row 4 and added a third large black rack to row 2

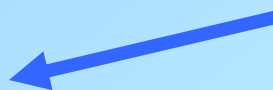
Moved tall blue (open) rack from north end of row 2 to east end of row 3 and added another of the same to row 3

Scaffolding Crates

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New Crates for Sta 2/3N scaffolds and Sta. 1 scaffolds are Done.



Removal of MMN and Sta. 1 south scaffolding is complete!



12/18/08

Installation Status

Remaining Issues

RIKEN/RBRC

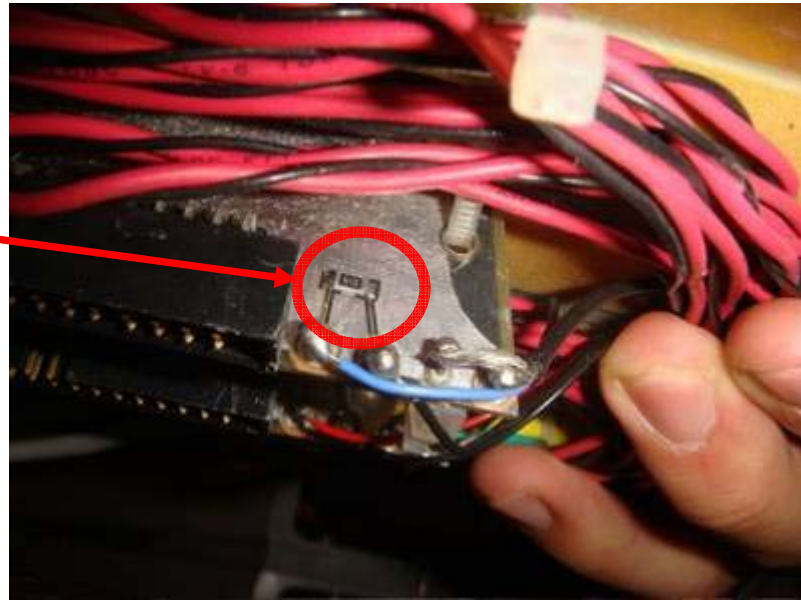
Itaru Nakagawa

North Activities @ IR this week

- Restore OASys cameras after scaffold disassembly, night shot.
- Frank installed 50 ohms registers to calibration pulse, N.St-3, Oct-6&7, Gap-2

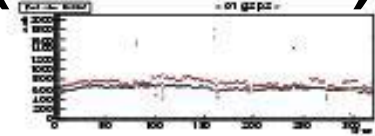
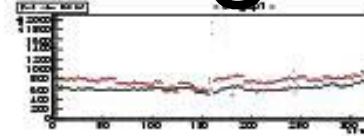
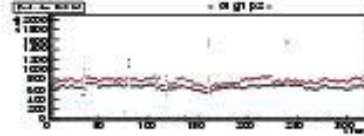
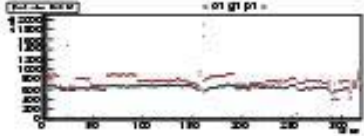


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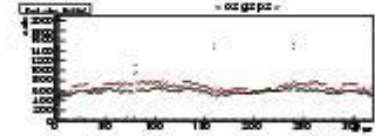
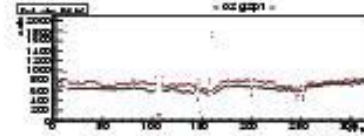
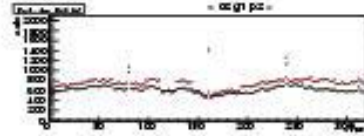
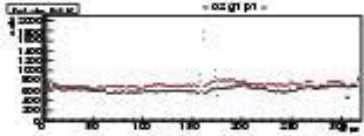


Calibration Pulse Height (N.St-3)

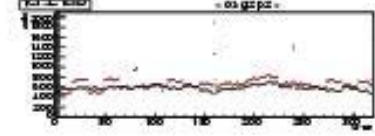
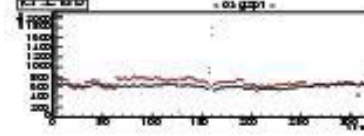
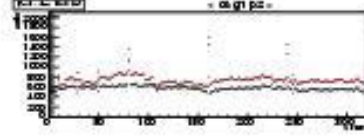
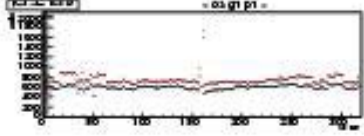
Oct. 1



Oct.2

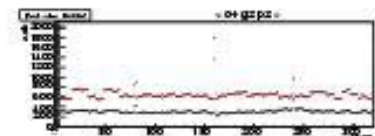
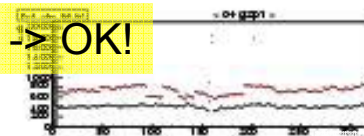
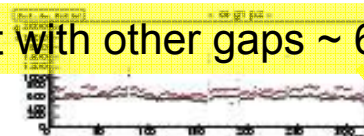
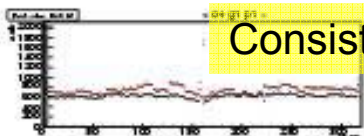


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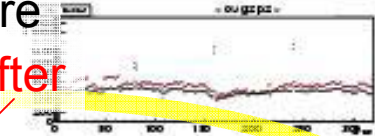
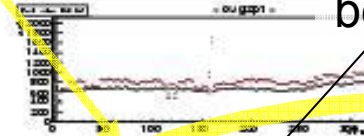
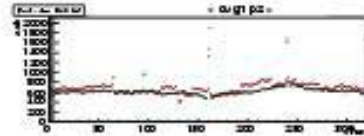
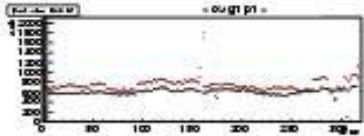


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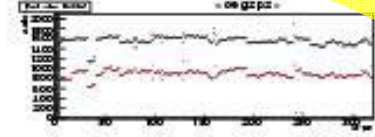
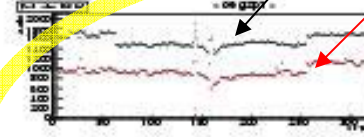
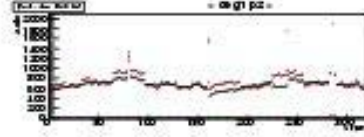
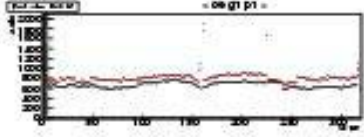
Consistent with other gaps ~ 600 -> OK!



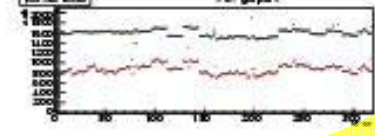
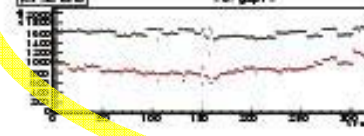
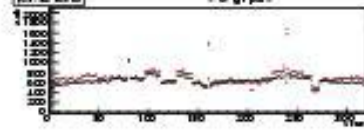
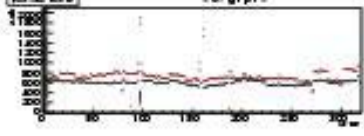
Oct.5



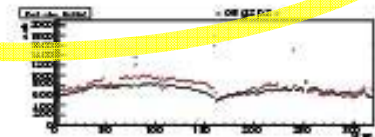
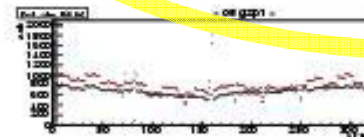
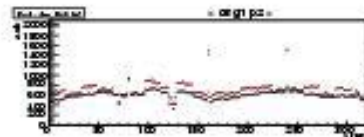
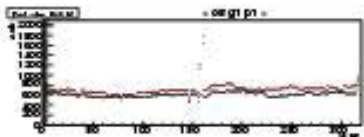
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Oct.7



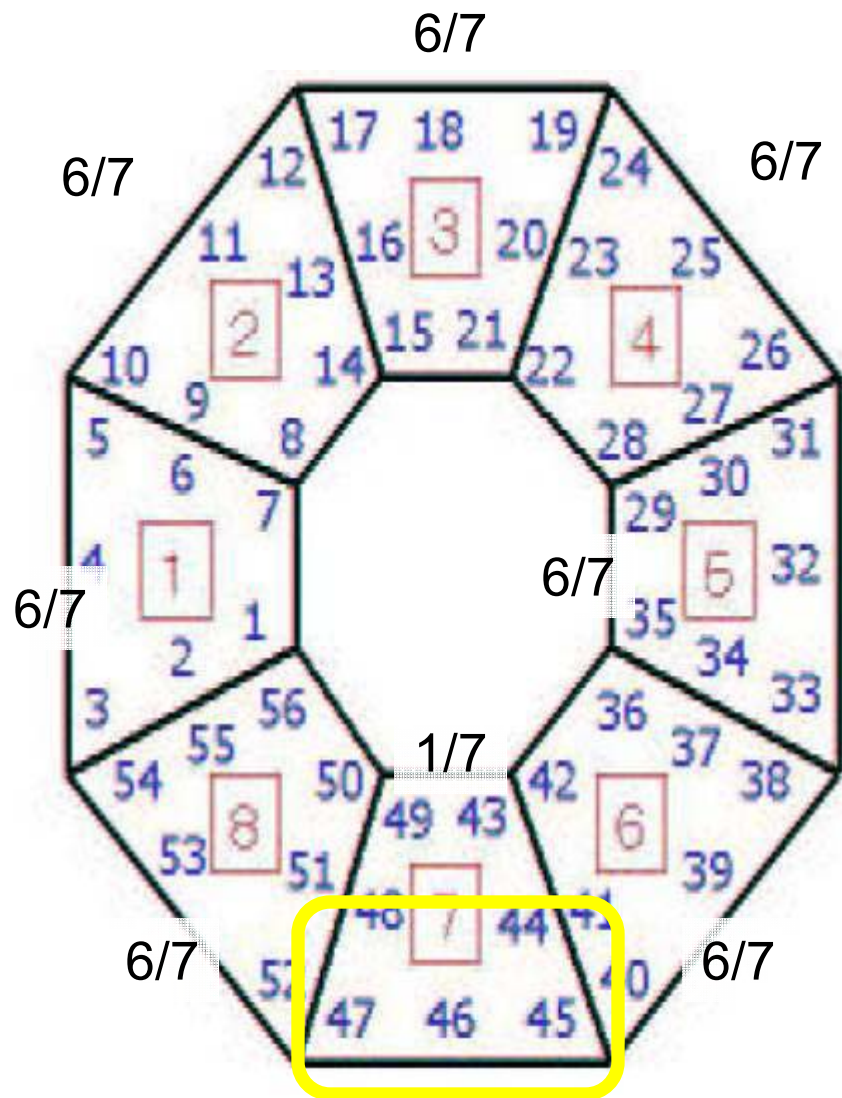
Oct.8



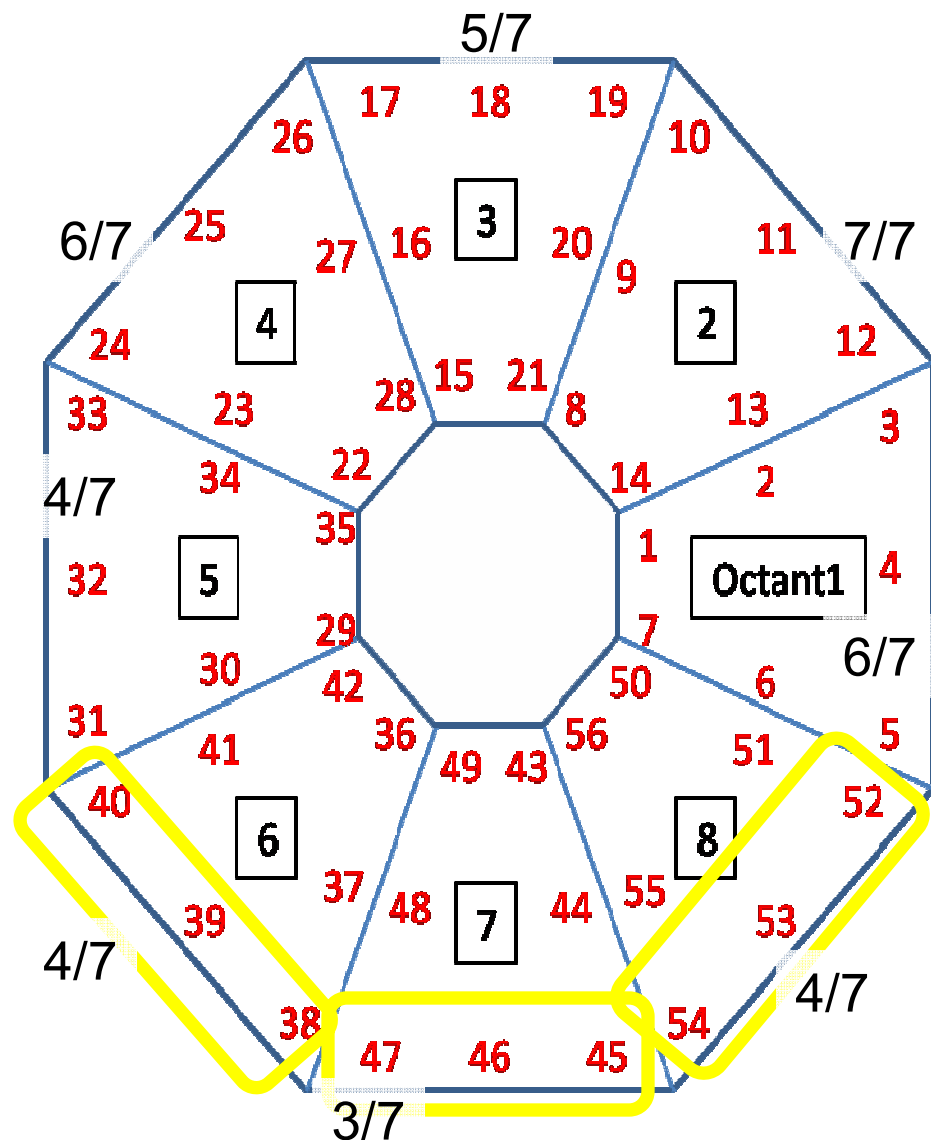
before

after

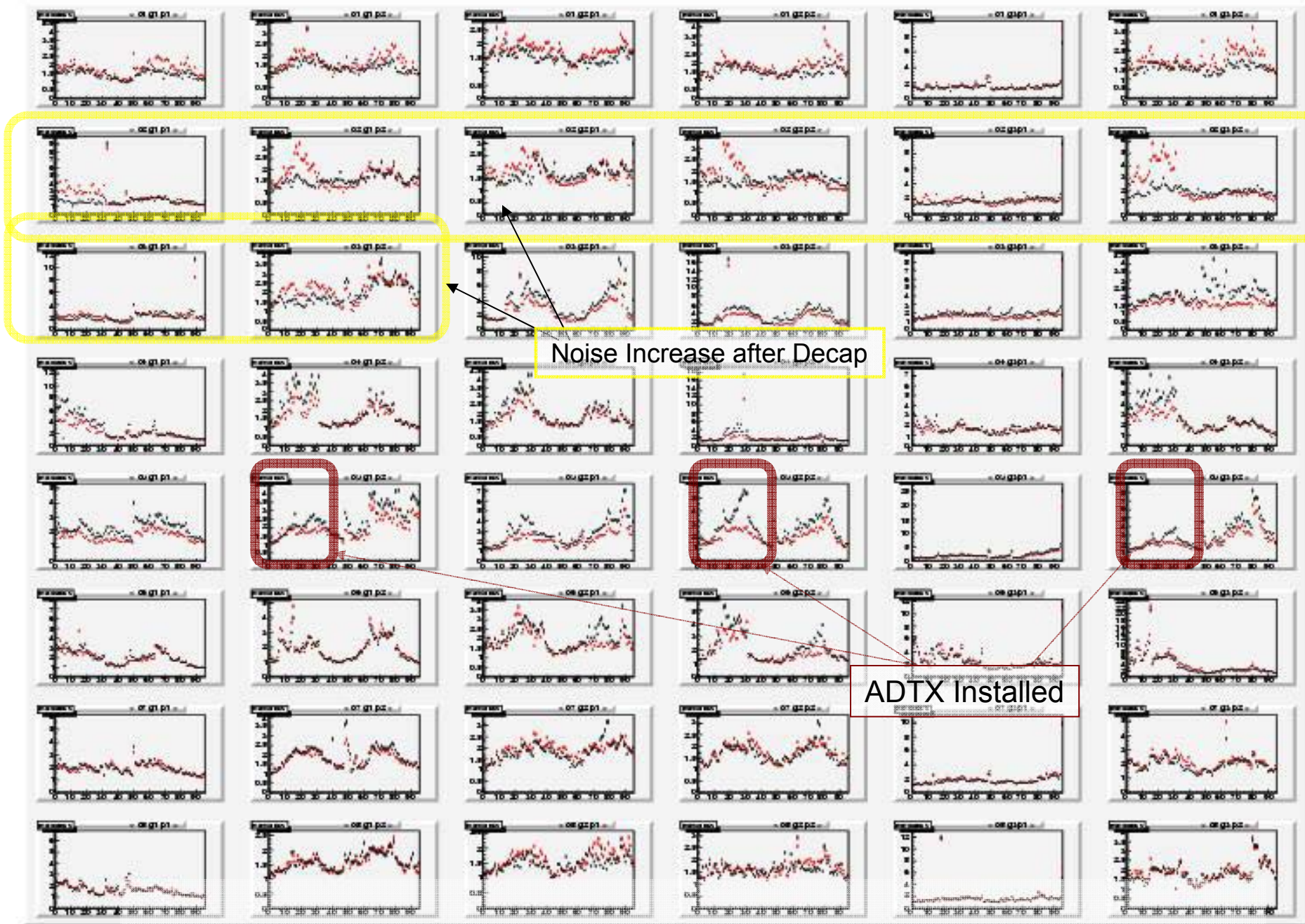
Optical Alignment System



North Arm

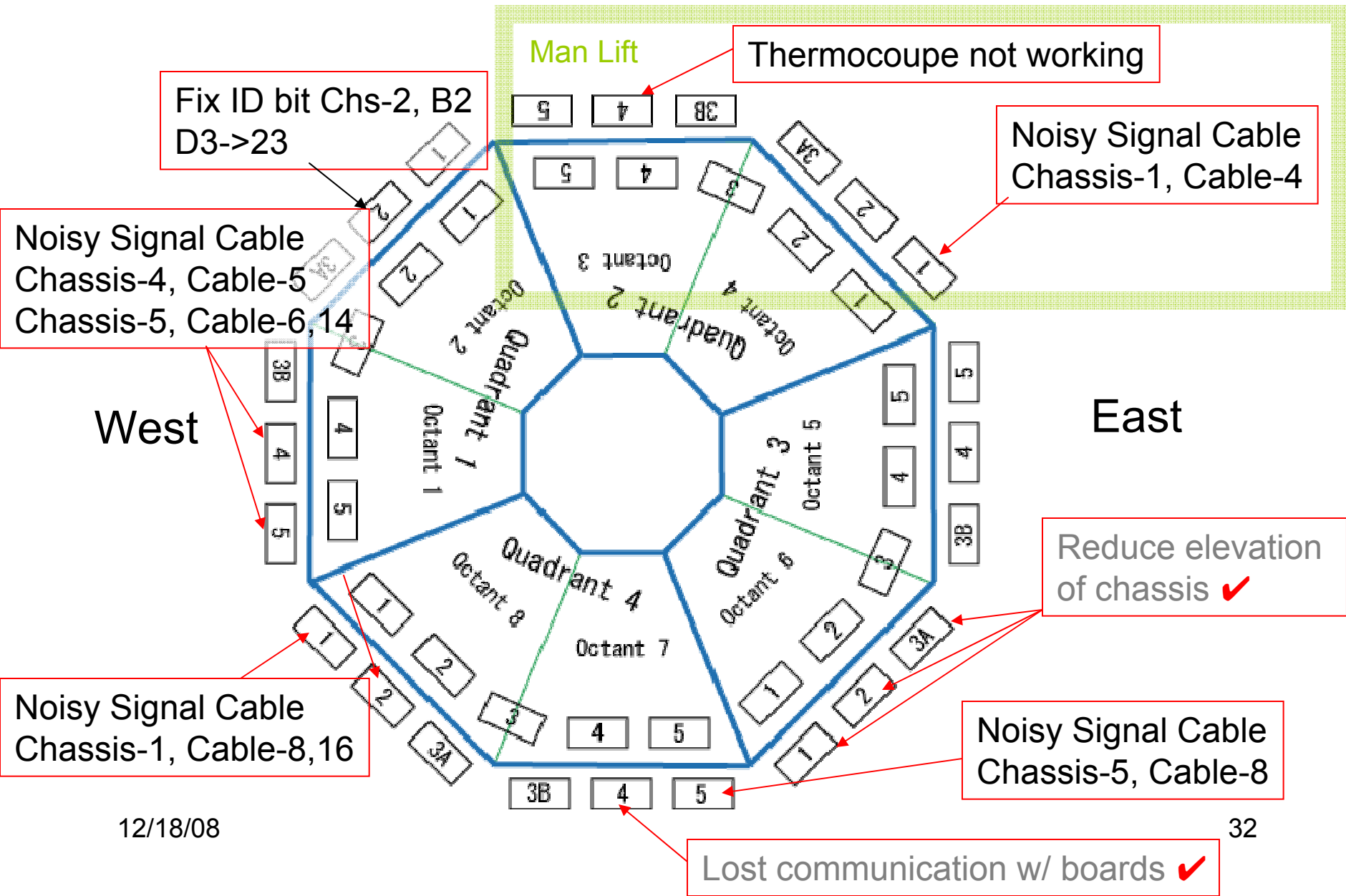


South Arm

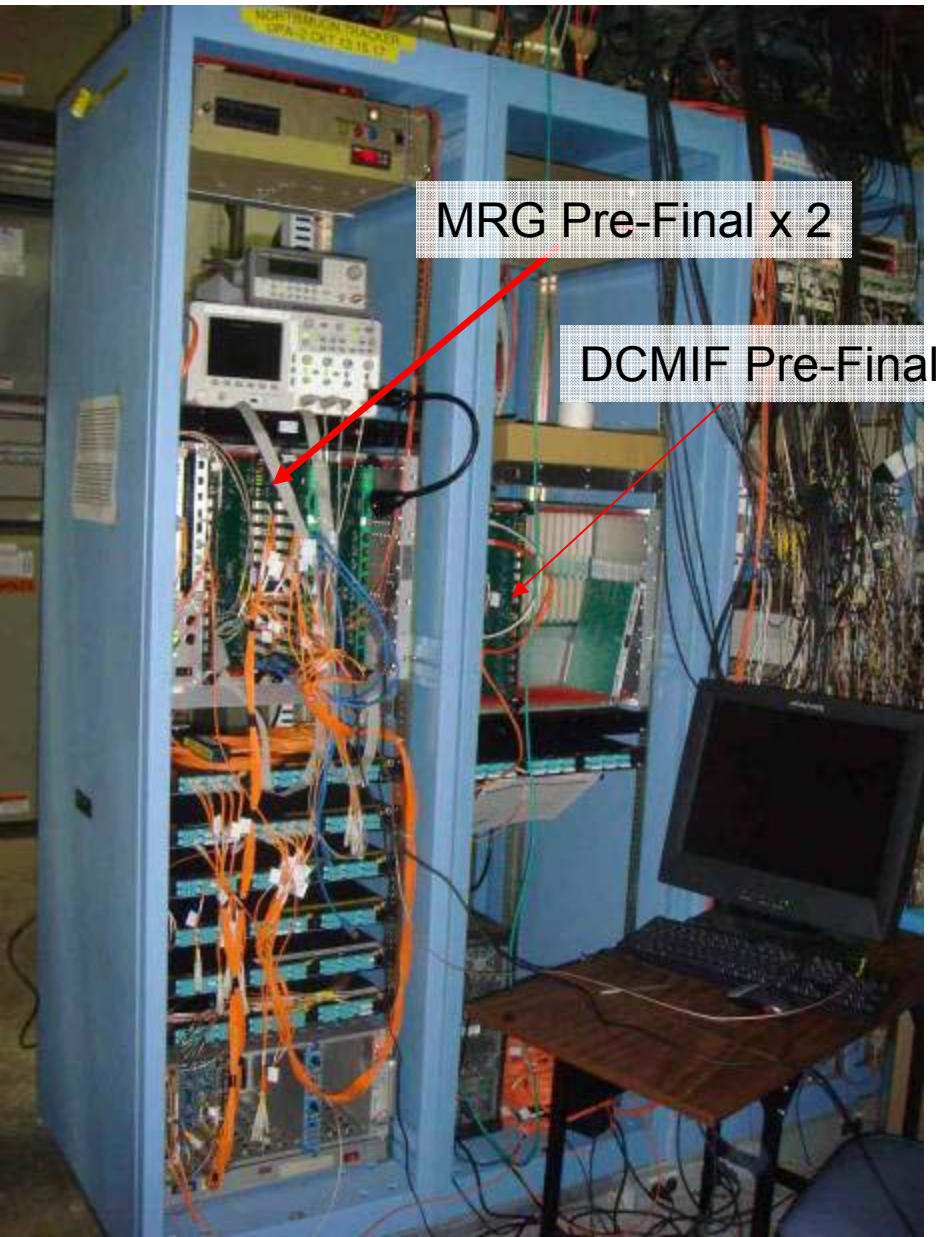


South Station-1 Noise Status

To be done for North Station-1



MRG Status



- MRG Pre-Final Version
 - Tested OK
 - Started Production 12/15
 - Expected Delivery ~ 2/1
- DCMIF Pre-Final Version
 - Testing
 - Start Production 12/22
 - Expected Delivery ~2/1

MuTRG Integration to PHENIX DAQ

Run Control for MUTR.N Owned by jh

File Options Mode

Stand Alone Mode

Download

Start

Pause

Close

Defaults

-- Run Type --

Junk

Run Number: 265479

Data Taking Mode: Multibuffer

Run Control State: Running

Run Start Time: 11/11/2004 14:58:10

Time In Run: 00:00:00

Run Time Remaining: 00:00:00

Outstanding Commands: 0

Magnet Polarity: UNKNOWN

Data Path: nfs

Data File Directory: /buffer/junkdata

Data File Name: rc-0265479-'GRANULE-NAME'-0.prdf

Run Length (min):

Granule State:

Run Control Log

multibuffer download

multibuffer read

Issuing command: wait

Issuing command: scaler read

Major Milestone!!

Granule Names	GTM Status			DCM Status				
	L1	Run	Busy	OK	L1	Busy	Glink	OK
MUTR.N	740	1			740			
					740			
					740			
					740			
					740			
					740			

MuTRG DCM → 740

Tailing /tmp/RCSA-MUTR.Nlog

created /export/software/oncs/online_configuration/Dcm/mutr_n_st2_daqs5b_0.dat

created /export/software/oncs/online_configuration/Dcm/mutr_n_st3a_daqs5c_0.dat

created /export/software/oncs/online_configuration/Dcm/mutr_n_st3b_daqs5c_1.dat

created /export/software/oncs/online_configuration/Dcm/mutrig_north_0.dat

Partition::Start run 265479 on MUTR.N

January 2009

December 2008	January 2009	February 2009
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6	1 2 3	1 2 3 4 5 6 7
7 8 9 10 11 12 13	4 5 6 7 8 9 10	8 9 10 11 12 13 14
14 15 16 17 18 19 20	11 12 13 14 15 16 17	15 16 17 18 19 20 21
21 22 23 24 25 26 27	18 19 20 21 22 23 24	22 23 24 25 26 27 28
28 29 30 31	25 26 27 28 29 30 31	

出張

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Itaru →

PHENIX Closing



Yoshi

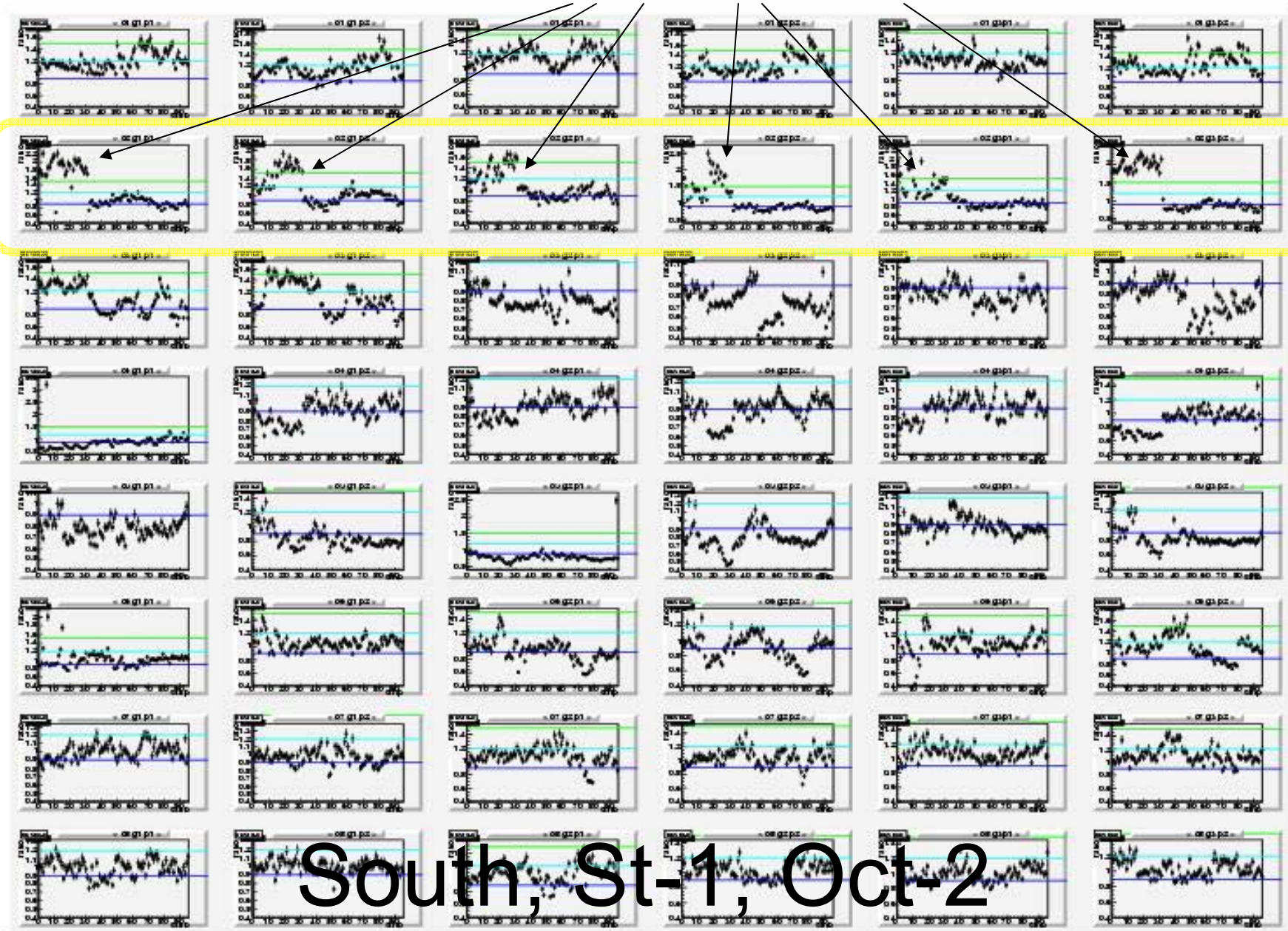


Tsutomu

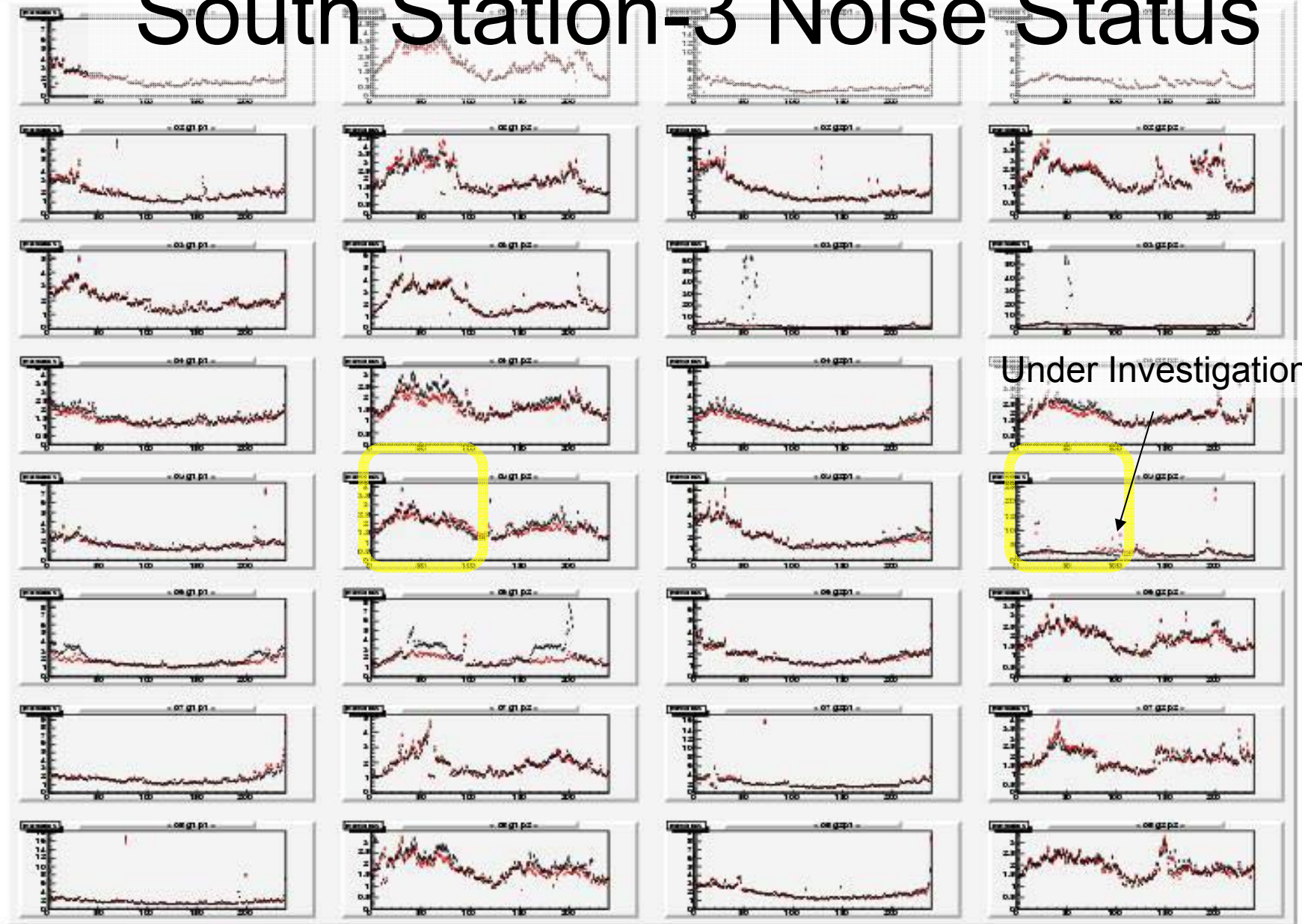
EC rolls in
Central Magnet in Run position

Backup Slide

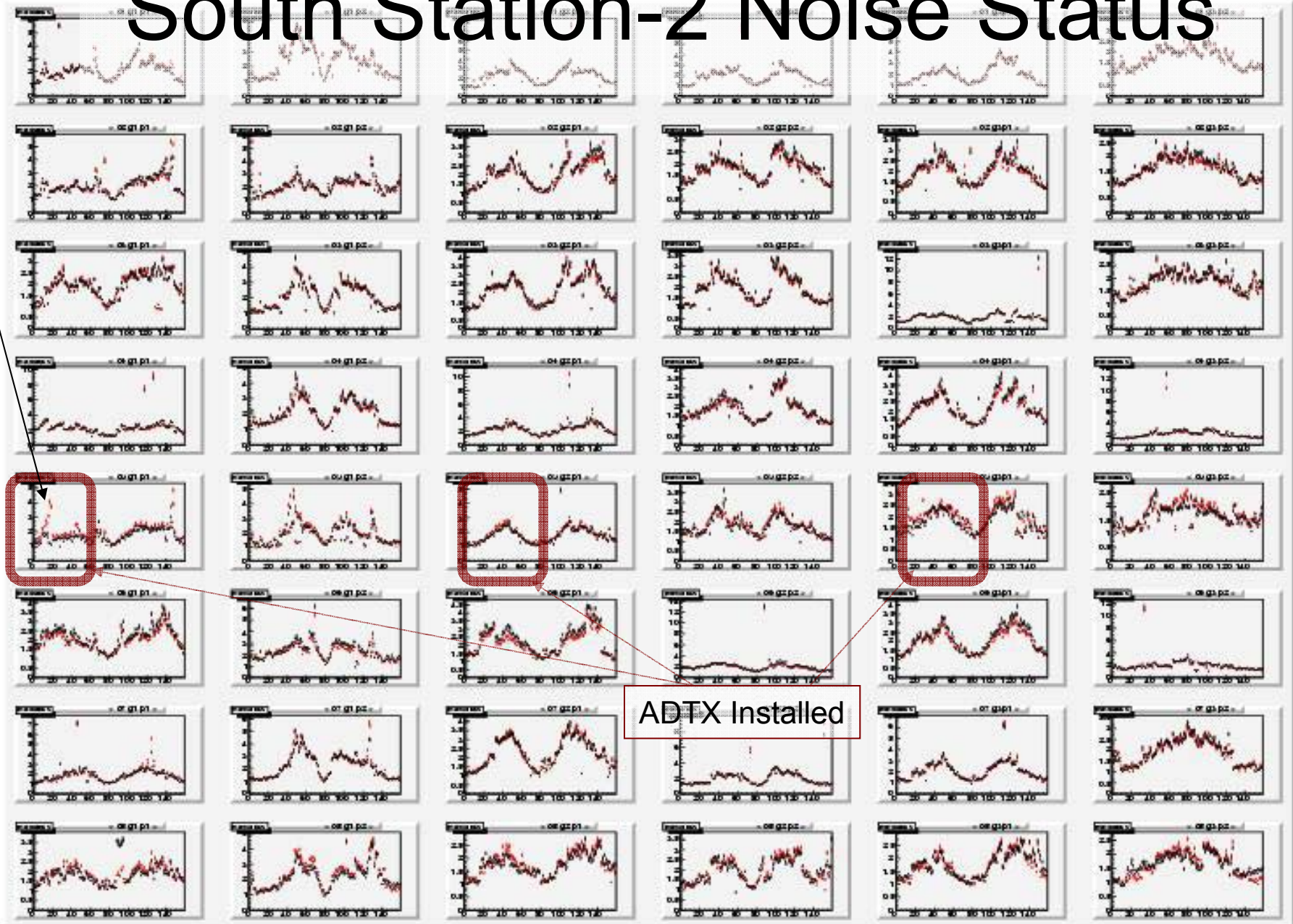
Strip#1~32 -> Chasis-1



South Station-3 Noise Status



South Station-2 Noise Status



Remaining Tasks @ IR

- North Station-1 Access
- Fix 6 dead trunk cables → Dec.29
- OASys
 - (Temporary) remove bottom platform and stairs for Oct.6-8, possible alignment
 - Play with light source alignment in St-1, North?
 - Long data taking with lights off
- Noise reduction St-2&3, South
- South final check list, e.g. visible check, firm connections, etc.



Safety, Security, etc.

SBMS Lessons Learned over:

Cylinder cart collapse: Inspect carts before use, replace defective carts.

Asbestos hazard: Personnel may not fully appreciate the hazards of asbestos exposure. Asbestos can cause significant lung disorders of both acute and chronic nature including lung cancer. Potential exposure to asbestos should be reported to safety coordinators immediately.

Scintillation vial dropped and broken - pay attention to your environment in both new and routine tasks. Small accidents breed big accidents

UPS fire- Be aware that equipment design and installation may lead to incompatibilities when using UPS's from different manufacturers.

Holiday Safety

~ 76 percent of Americans • decorate their homes for the holidays.

~ 5,000 people visit the • emergency room for holiday season decoration mishaps

~130,000 fires in December alone, → 400 fatalities and 1,600 injuries.

On average, > 200 • fire-related fatalities and injuries on Dec. 31st and Jan. 1st alone.

Almost 1/4 of all tree fires due to the tree being placed too close to a heat source.

holiday decorations and Christmas trees cause ~2,000 fires and > \$41M in property damage

The number of kids killed or • injured by fires more than 2x during the holidays.

Most homes have smoke detectors, but ~24 % have not replaced the batteries in > 2yrs.

Emergency rooms treat about 12,500 people for injuries such as falls, cuts, and shocks related to holiday lights, electrical decorations, and Christmas trees.

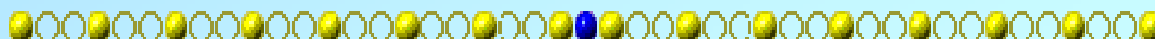
>20 % of Americans do not turn off holiday decorations before going to bed or leaving home

Enjoy the holidays, but be smart, be safe, and be prepared.

Where To Find PHENIX Engineering Info



Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm